were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best use the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

What is claimed is:

1. An ion source for a mass spectrometer comprising:

a chamber at or near atmospheric pressure,

a plurality of ionization probes extending into said chamber, each forming an ion spray of sample introduced to said probe,

an aperture or capillary coupling said chamber to a mass analyzer assembly,

a first passage communicating with said aperture or capillary,

a plurality of second passages connected to said first passage,

a plurality of orifices, each communicating with one of said second passages positioned to receive and direct ions from an associated ion spray into said first passage, and

means associated with each of said first and second passages for selectively blocking the flow of ions through said first and second passages.

2. An ion source as in claim **1** in which said means for blocking the passage of ions comprises means for directing gas outwardly through the orifice associated with said first passage.

3. An ion source as in claim **1** in which said means for blocking passage of ions comprises a valve disposed in each of said second passages.

4. An ion source as in claim **1** in which said ionization probe is an electrospray probe.

5. An ion source as in claim **1** in which said ionization probe is an atmospheric pressure chemical ionization probe.

6. An ion source as in claim **1** in which said ionization probes comprise electrospray probes and atmospheric pressure chemical ionization probes.

7. An ion source as in claim **1** in which one or more of said atmospheric pressure ionization probes is unblocked at any one time.

8. An ion source as in claim **4** in which one or more of said orifices is unblocked at any one time.

9. An ion source as in claim **5** in which one or more of said orifices is unblocked at any one time.

10. An ion source as in claim **6** in which one or more of said orifices is unblocked at any one time.

11. An ion source as in claim **1** in which said passages are formed in a block attached to said capillary.

12. An ion source as in claims **1**, **2**, **3**, **4** or **5** in which said ionization probes include probes for selectively forming both negative and positive ions.

13. A mass spectrometer including:

a mass analyzer assembly,

an ionization source including an ionization chamber,

a plurality of ionization probes extending into said chamber, said probes adapted to form ions from samples introduced into said probes,

an aperture or capillary coupling the chamber to the mass analyzer,

a multiport coupler having a plurality of first passages, each including an input orifice at one end for receiving ions from said probes and for directing ions into said aperture or capillary,

means associated with each of said first and second passages for selectively blocking the flow of ions through said passages.

14. An ion source as in claim **13** in which said means for blocking the passage of ions comprises means for directing gas outwardly through said input orifice.

15. A mass spectrometer as in claim **13** in which said plurality of ionization probes are selected from atmospheric pressure chemical ionization and electrospray ionization probes.

16. A mass spectrometer as in claim **13** in which said ionization probes include probes for forming both negative and positive ions.

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